

(NASA-CR-124169) STUDY OF THE DYNAMICS N73-20220 OF ORBITAL ASSEMBLIES INCLUDING INTERACTIONS WITH GEOMETRICAL APPENDAGES (TRW Systems) 22 p HC \$3.25 CSCL 09B Unclas G3/08 17354



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# STUDY OF THE DYNAMICS OF ORBITAL ASSEMBLIES INCLUDING INTERACTIONS WITH GEOMETRICAL APPENDAGES

Contract Nos. NAS 8-26131 NAS 8-28169

# UNIFIED FLEXIBLE SPACECRAFT SIMULATION PROGRAM (UFSSP)

#### OPERATION MANUAL

December, 1972 TRW No. 14938-6011-RU-00 Prepared: \_\_\_\_\_\_,

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(Updated to include modifications as of 18 December 1972)

for

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#### OPERATION OF UFSSP

#### SOFTWARE/HARDWARE REQUIREMENTS

#### CDC 6500

This program runs under the TRW/TSS system and requires 55,000 words of core, 5000 words of disk storage and up to 4 tape units during execution. This does not include disk requirements for I/O and overlay/loading. The program is coded in FORTRAN IV.

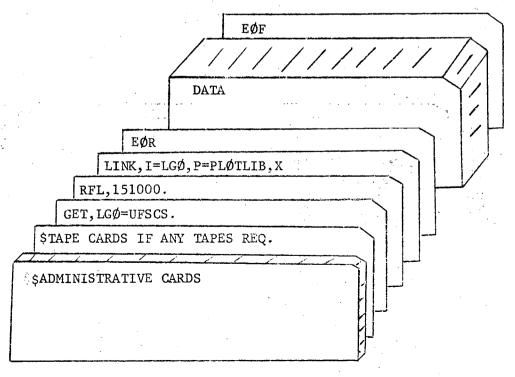
#### UNIVAC 1108

This program runs under the exec 8 system and requires 54,000 (+ system space) words of core, 5000 words of drum storage and up to 4 tape units (plot tape is a dummy) during operation. This does not include drum requirements for I/O and overlay/loading. The program is coded in FORTRAN IV compatible with FORTRAN V.

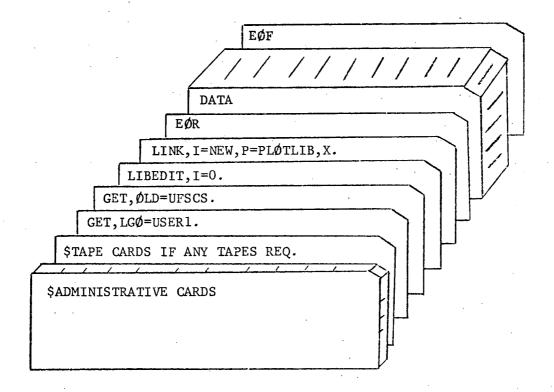
#### II. OVERALL DECK SET UP

#### CDC 6500

1. The following diagram assumes that the program, in relocatible form, is stored on disk under file name UFSCS.



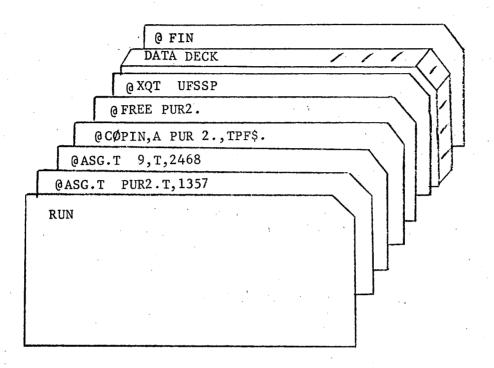
2. Deck setup for UFSSP with use of control system assuming "USER" subroutine is on a relocatible file - USER1.



3. If desired the user subroutine can be compiled from source cards and then the relocatible deck would be on LGØ and the remaining control cards would be identical to 2. above. The source deck could be part of the deck setup or come from a source file.

#### UNIVAC 1108

1. In order to exemplify the control cards necessary to run the UFSSP on the NASA/MSFC computing facilities, the following diagram assumes that the program resides on a magnetic tape with reel number 1357 and that the Structures Tape resides on reel number 2468.



 Deck set up for UFSSP with use of control system assuming "USER" subroutine is on a relocatible file.

(Diagram to be supplied by MSFC Programming Staff):

## III. TAPE/DISK/DRUM USAGE

•	CDC	UNIVAC	•	
Program	File	File	Tape	
Symbol	No.	No.	Usage	<u>Mode</u>
AS147 T	16 or	25 9 or 25	Structures Tape (can be on cards)	Binary or BCD
MØDTPE	40	8	Modal Data Tape	Binary
HISTPE	8	21	History Data Tape	Binary
PLØTPE	50	3	CALCOMP Plot Tape (not defined	
			for UNIVAC)	
IN	5	5	Input Card Set on Disk/Drum	BCD
ØUT	6	6	Print Data Set on Disk/Drum	B CD
INPSAV	30	1	Input Set for Previous Case	
			on Disk/Drum	Binary
ICFILE	60	2	Temp Storage for Control System	·
			Modal Data on Disk/Drum	Binary

See problem definition for tape record formats.

#### IV. LIST OF STANDARD/NONSTANDARD LIBRARY ROUTINES

Name	Purpose/Comments							
LIN	Linear Interpolation Subroutine							
LESK	Linear Equation Solver							
RKAM(S)	RUNGA KUTTA/Adams-Moulton Integration							
CPLØT	CALCOMP Plot Driver Routine-Not Good on UNIVAC							
XYPLØT	CALCOMP Plot Routine-Not Good for UNIVAC							
FSF	11 11 11 11 11 11							
INTBCD	11 11 11 11 11 11							
PLØT	11 11 11 11 11 11							
SINCØS	Sine/Cosine Routine (standard library routine)							
SQRT	Square Root Routine " " "							
ATAN	Arc Tangent Routine " " "							
SETCØ	Dynamics Sequencing Routine							

### V. PROGRAM LOAD MAP

See listing of the program load with overlay structure and cross-reference information immediately following.

CDC Load Map

LCAC MAP. CVERLAY 12/12/72. 20.45.01. PAGE 1 LCAD CPTIONS - CF, CR, LR, X FL REQUIRED TO LOAD - 71200 - 8 FL RECUIRED TO RUN 146500 LCADER DIRECTIVES. 1. OVERLAY (UFSSP, 0, C) 2. CVERLAY (UFSSP, 1, C) 3. GVERLAY(UFSSP,2,C) 4. CVERLAY(UESST.3.C) 5. CVERLAY (UFSSP, 4, C) 

LCAC MAP. CVERLAY CVL00C0 12/12/72. 20.45.01. PAGE 2

FWA DVERLAY 100 LWA CVERLAY 61222 LENGTH 61122

CVERLAY WRITTEN TO UFSSP

	BLOCK AD	DRESS L	ENGTH	FILE	DATE	
	/CVLTAB\$/	101	26			
L	MAIN	127	34	NEW	12/04/72.	
	GLOBAL	163	10	NEW	11/30/72.	
	ERROR.	173	2465	NEW	12/11/72.	
	GJI	2660	132	NEW	03/08/72.	
	HEADE	3012	43	NEW WITH IN	03/08/72.	
	MASTCN	3055	272	NEW	11/28/72.	
European en la manage de la man	ACGOER	3347	12	RUNLIB	*NC-DATE*	
	DUMP	3361	302	RUNLIB	11/20/70.	
	ENDFIL'	3663	73	RUNLIB	*NC-DATE*	
7	CUTPTC	3756	1334	RUNLIB	04/06/72.	
	OVERLAY	5312	127	RUNLIB	11/26/72.	· ·
	REWINM	5441	73	RUNLIB	*NG-DATE*	
	SINCOS	5534	7:7	RUNLIB	*NC-DATE*	
	SORT	5633	43	RUNLIB	*NC-DATE*	
	SYSTEM	5676	1214	RUNLIB	04/06/72.	
	GETBA	7112	17	RUNLIB	*NC-DATE*	
	\$10\$	7131	407	RUNLIB .	04/06/72.	
	SYSTEMQ ***	7540	43	RUNLIB	11/26/72.	
	CPUCDD	7603	13	RUNLIB	05/28/71.	
	CPUCIO	7616	257	RUNLIB	09/19/72.	
	and the second s	10075	24	RUNLIB	10/10/71.	
	/FIOBUF\$/	10121	1760			
	/STCARD/	221C1	2			
	/GIMOTR/	22103	6			
		,				

LCAD MAP. CVERLAY CVLOCCO 12/12/72. 20.45.01. PAGE 3
BLOCK ASSIGNMENTS.

•	BLOCK	ADDRESS	LENGTH	FILE	DATE
	/TPHASE/	22111	1		
	/FLAG/	22112	61C		
	/DISTRB/	22722	1252		
	/DYNINP/	24174	2443		
	/DRBQ/	26,637	· 5 <b>7</b>		
	/ORTFOG/	26716	2		
	/OUTP/	2672C	567		
	/SECP/	27607	516		
	/STVCTR/	30325	1272		
	/TBLINP/	31617	1152		
•	/FTOFQ/	32771	516		
	/MODEQ/	33507	16403		
Mark Walt	/ /RKAMST/	52112	7		
	COUTCOM/	52121	107		
<u> </u>	/CONINT/	5223C	4645		1
	/INPFLG/	57075	464		
•	/CONLOG/	57561	1211	· ·	
	/FICBUFR	60772	230		
∞	11	135632	10574		
				e e e e e e e e e e e e e e e e e e e	

LCAD MAP. GVERLAY CVL01CO 12/12/72. 20.45.01. PAGE 4

FWA OVERLAY 61222 LWA CVERLAY 114506 LENGTH 33264

CVERLAY WRITTEN TO UFSSP

	BLGCK	ADDRESS	LENGTH	FILE	DATE	AN ALIEN AND LOCATED THE ST.
	INPCON	61223	336	NEW	11/30/72	
<u> </u>	HEADI	61561	15C	NEW	03/08/72	
	INCONT	61731	556	NEW	12/09/72	
	INFLG	62507	124	NEW	11/28/72	
	INPCH-	62633	565	NEW	11/28/72	
	INPDIP	63420	425	NEW AND	11/28/72	
	INPDYP	64045	275	NEW	C3/08/72	
\$	INPICP	64342	201	NEW .	03/08/72	•
	INPREC	64543	1365	NEW	11/28/72	•
	INPRT	66130	1157	NEW	12/09/72	•
	INPSTR	67307	1323	NEW	11/28/72	
9	INPTAP	70632	307	NEW	C3/08/72	•
	INP1ER	71141	353	NEW	11/28/72	
**************************************	INP2ER	71514	330	NEW	11/28/72	•
	INP3ER	72044	336	NEW	11/28/72	•
	SETCO	72402	1272	NEW	03/08/72	•
	UTILP	73674	· 60	NEW .	03/08/72	
	UTILPR	73754	345	NEW 💮	03/08/72	
	INPUTB	74321	315	RUNLIB	C1/16/72	
	INPUTC	74636	1211	RUNLIB	04/06/72	•
	INPUTN	76047	1661	RUNLIB	08/11/71	•
	OUTPTB	7773C	250	RUNLIB	06/02/71	
	/INPUT/	3 1 4 4	3343			
He state to	/INPUT1	/ 103543	4564	医静脉 医异氯		
	/INPUT2	/ 110327	1006		A Company	

LOAD MAP. CVERLAY CVLC1CO 12/12/72. 20.45.01. PAGE 5 BLOCK ASSIGNMENTS. BLOCK ADDRESS LENGTH FILE DATE /INPUT3/ 111335 3151

LCAD MAP. CVERLAY CVL02CO 12/12/72. 20.45.01. PAGE 6

FWA OVERLAY 61222 LWA CVERLAY 104266 LENGTH 23044

OVERLAY WRITTEN TO UFSSP

	BLCCK AL	DERESS LE	NGTH	FILE	DATE
	MCDCTL	61223	1070	NEW	11/30/72.
	CROSS	62313	50	NEW	03/08/72.
	DOT	.62363	30	NEW	03/08/72.
	GETMDE	62413	361	NEW	03/08/72.
	MCALC	62774	2477	NEW Hall	11/30/72.
	MINT	65472	373	NEW STATE	03/08/72.
* \$	RMTAPE	6606 <b>6</b>	616	NEW	11/30/72.
	SPECFB	66704	4735	NEW	03/08/72.
	IFENDF	73641	32	RUNLIB	*NC-DATE*
	INPUTB	73673	315	RUNLIB	C1/16/72.
	INPUTC	7421C	1211	RUNLIB	04/06/72.
1	CUTPTB	75421	250	RUNLIB	06/02/71.
	/ICTLMQ/	75671	565		· · · · · · · · · · · · · · · · · · ·
	/IMCDEQ/	76456	5610		

LOAD MAP. OVERLAY CVL03CO 12/12/72. 20.45.01. PAGE 7

FWA OVERLAY 61222 LWA CVERLAY 135632 LENGTH 54410

CVERLAY WRITTEN TO UFSSE

28. 12 E. Avis	BLCCK AC	DRESS LE	VGTF	FILE	DATE	
			~~.		10/10/70	
	CALCPR		234	NEW	12/12/72.	
	DERIV	61457	36	NEW	12/12/72.	
	DFIRST	61515	301	NEW	03/08/72.	
*	ERROR1	62016	25	NEW	08/29/72.	- in san (san éachar mark i
	GETST	62043	155	NEW AND THE	03/08/72.	
	HEAD	6222C	47	NEW	108/29/72	
N.	HISTPC :	62267	700	NEW	11/28/72.	
Legacia con especial de la composición del composición de la composición de la composición del composición de la composición de la composición de la composición de la composición del composición de la composición de la composición del composici	FISTPL	63167	454	NEW	11/27/72.	
	INDER	63643	44	NEW	03/08/72.	
	ITIMER	63707	12	NEW	03/08/72.	
	ORBIT	63.721	731	NEW A	11/06/72.	
5	CUTCAL	64652	152	NEW	08/29/72.	
	PRINCH	65024	1534	NEW	12/05/72.	Ave. 4
Lance and the second se	PRMOTN	6656C	203	NEW	03/08/72.	
	RIGAUX	66763	764	NEW	08/29/72.	
	RKAMS	67747	576	NEW	C3/C8/72.	
1.5	STOST	70545	165	NEW	03/08/72.	
	UNPSTD	70732	152	NEW	03/08/72.	
	ABC	71104 - "	146	NEW	03/08/72.	
	ABPC	71252	101	NEW	C3/08/72.	
,	AEBC	71353	175	NEW	03/08/72.	
	AEBPC	7155C	115	NEW	03/08/72.	
	CDEL CAMO	71665	101	NEW TOWN	03/08/72.	
		71766	45	NEW	03/08/72	
	CROSS	72033	50	NEW	03/08/72.	
		-				

LCAC MAP. CVERLAY CVL03CO 12/12/72. 20.45.01. PAGE 8
BLOCK ASSIGNMENTS.

,	BLOCK	ADDRESS	LENGTH	FILE	CATE	
	DCT	72103	30	NEW	03/08/72	그는 이번에게 하는 점실한 일반을 맞아 많은 바라하다면 하다.
	GDOTJ	72133	124	NEW	03/08/72.	
	GJSUB	72257	77	NEW	C3/08/72.	
	LIN	72356	122	NEW	03/08/72	
-	MNTR	725CC	45	NEW	03/08/72.	
	MV3X3	72545	70	NEW	03/08/72.	
	NNTR	72635	61	NEW	C3/08/72.	마이트 보고 있다. 그는 사람들은 사람들은 사람들은 사람들은 사람들은 사람들은 사람들은 사람들은
	NTERP	72716	51	NEW	03/08/72.	The state of the s
	SCAL	72767	52	NEW	03/08/72.	
	STBA	73041	51	NEW	03/08/72.	
	STZ	73112	41	NEW	03/08/72.	
	TAN	73153	37	NEW	C3/08/72.	
	UVDOT	73212	46	NEW	03/08/72.	
	INTERC	7326C	111	NEW	12/12/72.	and the state of the
	CFIRST	73371	136	NEW	11/30/72.	
	RGDIS1	73527	161	NEW	12/04/72.	
	CONSYS	7371C	214	NEW.	12/08/72.	
<b>—</b>	SNGPOL	74124	140	NEW	11/27/72.	
ω ·	DBLPCL	74264	247	NEW	12/08/72.	
	SUM2	74533	112	NEW	11/27/72.	
*	SUM 1	74645	55	NEW	11/27/72.	
	SUM3	74722	133	NEW	11/27/72.	
	MULDIV	75055	112	NEW	11/27/72.	
	DZLIM	75167	140	NEW	11/27/72.	
	CUAN	75327	114	NEW	11/27/72.	
	CUTZ	75443	55	NEW.	11/27/72.	
	SINFCT	7552C	47	NEW	11/27/72.	
	HYS	75567	151	NEW	11/27/72.	
	PELAY	7574C	214	NEW	11/27/72.	
	DELAY	76154	166	NEW (	11/27/72.	
	TIMECT	76342	223	NEW	11/27/72.	
	USER	76565	110	NEW	12/12/72.	
	CSFGRC	76675	514	NEW	12/08/72.	
1	CSSEN	77411	561	NEW	12/08/72	
<u> </u>	PACCSV	100172	30	NEW	11/30/72.	

LOAD MAP. CVERLAY CVLO3CO 12/12/72. 20.45.01. PAGE 9
BLOCK ASSIGNMENTS.

BLOCK   ALCRESS   LENGTH   FILE   DATE	• •	DECON MOST	CIVICIVICA				
DERIVI 100252 525 NEW 12/12/72.	1	BLOCK	ACCRESS	LENGTH	FILE	DATE	
DERIVI 100252 525 NEW 12/12/72.	1				4.		
FLXAUX 100777 1155 NEW 10/04/72. FLXCUM 102154 1002 NEW 08/29/72. FLXCID 103156 542 NEW 03/08/72. FLXCOD 10372C 720 NEW C3/08/72. GFEFD 10464C 167 NEW C3/08/72. GFMERD 105027 432 NEW C3/08/72. GIMRT 105461 255 NEW 09/26/72. LESK 105726 471 NEW 03/08/72. MATCMP 106427 436 NEW 03/08/72. MATCMP 107065 150 NEW 03/08/72. RIGCOM 107235 3501 NEW 10/04/72. RIGCOM 107235 3501 NEW 10/04/72. RIGCOM 107235 3501 NEW 03/08/72. RIGCOM 107235 3501 NEW 03/08/72. RIGCOM 113460 220 NEW 03/08/72. RIGCOD 113460 220 NEW 03/08/72. RIGCOD 114074 216 NEW 09/16/72. ASINCOS 114312 136 RUNLIB *NC-DATE* CUTPTB 114544 250 RUNLIB *NC-DATE* CUTPTB 114544 250 RUNLIB *NC-DATE* CUTPTB 115014 547 RUNLIB *NC-DATE* ALNUCG 115642 67 RUNLIB *NC-DATE* ALNUCG 115672 504 //CSDATA/ 116010 474 //JHIST/ 116504 66 //CALLCD/ 116572 504 //CGNTF/ 117276 2552 //PPNCAL/ 122050 3117 //FELAGY 125167 26 //ERASE/ 125215 1173 //RBAUXQ/ 126410 2421 //IDPARM/ 132031 505		UNPCSV	100222	30	NEW	11/30/72.	
FLXCOM 102154 1002 NEW C8/29/72. FLXDIS 103156 542 NEW C3/C8/72. FLXCD 16372C 720 NEW C3/C8/72. GFEFD 1C464C 167 NEW C2/O8/72. GFMERD 105027 432 NEW C3/C8/72. GIMRT 105461 255 NEW C3/C8/72. LESK 105736 471 NEW C3/C8/72. MATDMP 106427 436 NEW C3/C8/72. MATDMP 106427 436 NEW C3/O8/72. R1GCCM 107235 35C1 NEW 1C/O4/72. R1GCCM 107235 35C1 NEW 1C/O4/72. R1GCCD 11346C 220 NEW C3/C8/72. R1GCLD 114074 216 NEW C3/C8/72. RIGCLD 114074 216 NEW C9/16/72. ASINCOS 114312 136 RUNLIB *NC-DATE* CUTPTB 114544 250 RUNLIB *NC-DATE* CUTPTB 114544 250 RUNLIB *NC-DATE* RBAREX 115503 57 RUNLIB *NC-DATE* RBAREX 115504 66 /CSDATA/ 11601C 474 /TJHIST/ 116504 66 /CALLCD/ 116572 504 /CONTT/ 117276 2552 /PPNCAL/ 122050 3117 /DFLAG7 125167 26 /ERASE/ 125215 1173 /RBAUXO/ 12641C 3421 /TDPARMY 132031 505 /CONST/ 13236 30		DERIVI	100252	525	NEW		
FLXDIS 103156 542 NEW C3/C6/72.  FLXLCD 10372C 720 NEW C3/C6/72.  GFEFD 1C464C 167 NEW C3/C6/72.  GFMERD 105027 432 NEW C3/C6/72.  GIMRT 105461 255 NEW C3/C6/72.  LESK 105736 471 NEW C3/C6/72.  MATDMP 106427 436 NEW C3/C6/72.  MATPRT 107C65 150 NEW C3/C6/72.  R1GCCM 107235 35C1 NEW C3/C6/72.  R1GCD 11346C 220 NEW C3/C6/72.  R1GCLD 11370C 174 NEW C3/C6/72.  R1GCLD 114074 216 NEW C3/C6/72.  R1GCLD 114074 216 NEW C9/16/72.  ASINCES 114312 136 RUNLIB *NC-DATE*  CUIPTB 114544 250 RUNLIB *NC-DATE*  CUIPTB 114544 250 RUNLIB *NC-DATE*  RBAREX 115563 57 RUNLIB *NC-DATE*  RBAREX 115563 57 RUNLIB *NC-DATE*  RBAREX 115563 67 RUNLIB *NC-DATE*  ALNLIG 115642 67 RUNLIB *NC-DATE*  FXP 115731 57 RUNLIB *NC-DATE*  FXP 15731 57 RUNLIB *NC-DATE*  FX 15741 11504 66		FLXAUX	100777	1155	NEW	10/04/72.	
FLXLCD	•	FLXCOM	102154	1002	NEW	08/29/72.	
GFEFD 1C464C 167 NEW C2/08/72. GFMERD 105027 432 NEW C3/C8/72. GIMRT 105461 255 NEW C9/26/72. LESK 105736 471 NEW C3/08/72. MATDMP 106427 436 NEW C3/08/72. MATPRT 107065 150 NEW 03/08/72. RIGCOM 107235 35C1 NEW 1C/04/72. RIGCOM 107235 35C1 NEW 1C/04/72. RIGCOM 11376C 220 NEW C3/08/72. RIGCOD 11346C 220 NEW C3/08/72. RIGCOD 11370C 174 NEW C8/28/72. RIGCOD 114074 216 NEW C9/16/72. ASINCOS 114312 136 RUNLIB *NC-DATE* CUTPTB 114544 250 RUNLIB *NC-DATE* CUTPTB 114544 250 RUNLIB *NC-DATE* RBAREX 115563 57 RUNLIB *NC-DATE* RBAREX 115563 57 RUNLIB *NC-DATE* RBAREX 115564 67 RUNLIB *NC-DATE* EXP 115731 57 RUNLIB *NC-DATE* FXP 15731 57 RUNLIB *NC-DATE* FX 15731 57 RUNLIB *NC-DATE* FX 15731 57 RUNL		FLXDIS	103156	542	NEW		
GFMERD 105027 432 NEW C3/C8/72.  GIMRT 105461 255 NEW C9/26/72.  LESK 105736 471 NEW C3/C8/72.  MATDMP 106427 436 NEW C3/O8/72.  MATPRT 107C65 150 NEW C3/O8/72.  R1GCCM 107235 35C1 NEW 1C/O4/72.  R1GCTD 11346C 220 NEW C3/O8/72.  R1GCLD 1137OC 174 NEW C8/28/72.  R1GCLD 114074 216 NEW C9/16/72.  R1GCLD 114074 216 NEW C9/16/72.  ASINCOS 114312 136 RUNLIB *NC-DATE*  ATAN 11450 74 RUNLIB *NC-DATE*  CUTPTB 114544 250 RUNLIB C6/C2/71.  OUTPTN 115014 547 RUNLIB *NC-DATE*  RBAREX 115563 57 RUNLIB *NC-DATE*  RBAREX 115563 57 RUNLIB *NC-DATE*  RBAREX 115642 67 RUNLIB *NC-DATE*  ALNLCG 115642 67 RUNLIB *NC-DATE*  FXP 115721 57 RUNLIB *NC-DATE*  //CSCATA/ 11601C 474  //TJHIST/ 116504 66  //CALLCD/ 176572 5C4  //CONTF/ 117276 2552  //PPNCAL/ 122050 3117  /OFLAG/ 125167 26  //ERASE/ 12515 1173  //RBAUXO/ 12641C 3421  //TDPARM/ 132031 505  //CONST/ 132536 30	3	FLXLCD	10372C	720			
GIMRT 105461 255 NEW 09/26/72.  LESK 105736 471 NEW 03/08/72.  MATDMP 106427 436 NEW 03/08/72.  MATPRT 107065 150 NEW 03/08/72.  RIGCOM 107235 3501 NEW 10/04/72.  RIGDIS 112736 522 NEW 03/08/72.  RIGLOD 113460 220 NEW 03/08/72.  FLXCLD 113700 174 NEW 08/28/72.  RIGCLD 114074 216 NEW 09/16/72.  ASINCOS 114312 136 RUNLIB *NC-DATE*  CUIPTB 114544 250 RUNLIB *NC-DATE*  CUIPTB 114544 250 RUNLIB *NC-DATE*  RBAREX 115563 57 RUNLIB *NC-DATE*  RBAREX 115563 57 RUNLIB *NC-DATE*  ALNUCG 115642 67 RUNLIB *NC-DATE*  ALNUCG 115642 67 RUNLIB *NC-DATE*  YCSCATA/ 116010 474  //JHIST/ 116504 66  //CALLOD/ 116572 504  //CONTF/ 117276 2552  /PPNCAL/ 122050 3117  /OFLAG/ 125167 26  //RBAUXO/ 126410 3421  //TOPÄRM/ 132031 505  //CONST/ 132536 30	.*.	GFEFD	104640	167	NEW	C3/08/72.	
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٠	 BLOCK	ADDRESS	LENGTH	FILE	DATE		
	/IDISTQ/ /CNSYSD/	1326CC 132613	13 2330		<sup>*</sup> · · · · · · · · · · · · · · · · · · ·		
	 /FBAUXQ/	135143	467				

LOAD MAP. OVERLAY CVL04CO 12/12/72. 20.45.01. PAGE 11

FWA OVERLAY 61222 LWA CVERLAY 127254 LENGTH 46032

EVERLAY WRITTEN TO UFSSP

	BLOCK A	CORESS LE	NGTH	FILE	DATE	
	RDLCAD	61223	107	NEW	09/28/72.	•
L	CPLOT	61332 2	1653	NEW	12/09/72.	
	RDLD	103205	77	NEW	09/28/72.	•
•	FSF	103304	44	NEW	03/07/72.	
	INTBCD	103350	47	NEW	03/07/72.	
Harrish Ta	XYPLCT	103417	1050	NEW	12/09/72.	the second
	AXIS	114467	414	PLCTLIB	*NO-DATE*	1 - 14
	LINE	115103	262	PLCTLIB	*NC-DATE*	
	NUMBER	115365	266	PLOTLI8	*NC-DATE*	
	PLOT	115653	733	PLCTLIB	04/16/72.	*
	SCAL	116606	150	PLCTLIB	*NC-DATE*	
6	SYMBOL	116756	420	PLOTLIB	*NC-DATE*	
	BACKSP	117376	174	RUNLIB	08/17/70.	
	IFENDE	117572	32	RUNLIB	*NC-DATE*	
*	INPUTB	117624	315	RUNLIB	01/16/72.	
	ALNLCG	120141	67	RUNLIB	*NC-DATE*	
- 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	RBAIEX	120230	41	RUNLIB	*NC-DATE*	
1	REAREX	120271	. 57	RUNLIB	*NC-DATE*	
	EXP	120350	57	RUNLIB	*NO-DATE*	
<u> </u>	/RDTEM/	120427	3410		and the state of t	
	/PLOT/	124037	23			•
	/CONCNV/	124062	5			
	/CPLXY/	124067	3164			
	/NCASE/	127253	1			

#### UNIVAC Load Map

#### MAP,15 UFSSP,UFSSP MAP 17M1-10/27-09:05 -(.J)

- 1. LIB SYS\$\*MSFC\$
- 2. SEG A
- 3. IN MAIN, GLOBAL, ERROR, MASTCN, HEADE, CPLOT, CROSS, DOT, GJI
- 4. SEG B\*, (A)
- 5. IN INPCON, INPRED, INPCH, INPIER, INP2ER, INP3ER, INPSTR, INCONT
- 6. IN INFLG, SETCO, INPRT, INPICP, INPDIP, INPDYP, INPTAP, UTILP
- 7. IN UTILPR, HEAD1, INPUT, INPUT1, INPUT2, INPUT3
- 8. SEG C\*, B
- 9. IN GETMDE, MCALC, MODCTL, RMTAPE, MINT, SPECFB, IMODEQ, ICTLMQ
- 10. SEG D\*, C
- 11. IN CALCPR, DERIV, GETST, RIGAUX, PRINCN, HISTPC, HISTPL, ERROR1, HEAD
- 12. IN DFIRST, INDER, ORBIT, PRMOTN, ABC, ABPC, AEBC, AEBPC
- 13. IN CDEL, CROP, GDOTJ, GJSUB, LIN, ØUTCAL, UNPSTD
- 14. IN MNTR, MV3X3, NNTR, NTERP, SCAL, STBA, STZ, TAN
- 15. IN UVDOT, STOST, RKAMS, PRNCAL, CONTF, TDPARM, RBAUXQ, ERASE
- 16. IN DFLAG, CONST, IDISTQ, CSDATA, TJHIST, CALLOD, ORTHCK
- 17. SEG E\*, (D)
- 18. IN INTERC, CFIRST, UNPCSV, CSSEN, CONSYS, CSFORC, PACCSV
- 19. IN SNGPØL, DBLPØL, SUM2, SUM1, SUM3, MULDIV, DZLIM, QUAN
- 20. IN QUTZ, SINFCT, HYS, RELAY, DELAY, TIMFCT, USER, RGDIS1, CNSYSD
- 21. SEG F\*, E
- 22. IN DERIVI, MATDMP, MATPRT, FLXAUX, FLXDIS, FLXLOD, GIMRT
- 23. IN FLXCOM, GFEFD, GFMERD, RIGCOM, RIGDIS, RIGLOD, LESK, RIGCLD
- 24. IN FLXCLD, FBAUXQ

ADDRESS LIMITS 00100 043737 044000 144137 SEGMENT LOAD TABLE 044000 044027 STARTING ADDRESS 011003

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CONINT (COMMON BLUCK)		· ·			062126	-
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FLAG (COMMUN BLOCK)	<b></b>			÷		102751
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#### VI. BLOCK DIAGRAM OF MASTCN

MASTCN is the master control subroutine which controls the program.

